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THE INTERNATIONAL JOURNAL FOR THE EDUCATION OF THE BLIND

Arithmetic Aids For The Blind

By Edward J. Waterhouse

Director, Perkins Institution and Massachusetts School for the Blind

While one may well claim that arithmetic is an exact science, it would be difficult to maintain that the teaching of arithmetic is either scientific or exact. Conventional techniques exist, all of them arbitrary in nature, and most of them dignified by age. But the teaching of arithmetic is a very human process, and such suggestions as are offered in this article are not presented dogmatically. Perhaps there is nothing new in them. If they have any value, it is because they have come directly from the experience of blind boys and girls seeking to accomplish arithmetic computation in the most convenient way.

The obvious difference between the approach of a blind person to an arithmetic problem, and the approach of a seeing person, is that the latter can use paper and pencil so conveniently. Probably it is not realized how much the common arithmetic techniques are based on the availability of these simple implements. As soon as paper and pencil become unavailable, people begin to turn to their own minds, and to develop mental tricks to help them. This article is not a plea for the overdevelopment of mental capacities. There are, of course, a number of blind people, as well as seeing ones, who have become highly skilled in mental calculations beyond the capacity of most people. There have, I believe, been some teachers of arithmetic in schools for the blind who have overemphasized mental skills.

In considering the various available devices, it is important to remember that they have all been designed with the idea of making it possible for blind children to do arithmetic in exactly the same way as seeing people do. It is my experience that out of the classroom blind people do not follow the same arithmetic patterns as the seeing, and therefore it would seem to be wise to consider the possibility of teaching blind children from the start to approach their problems in a way which they will probably puzzle out for themselves.

TAYLOR SLATE AND CUBARITHM. The first arithmetic slate, to my knowledge, that acquired any widespread approval was the Taylor slate originating in England in the nineteenth century. The cubarithm is a logical development of the Taylor slate, now that the Braille Code is universally accepted. Each of these two slates has supporters who favor one over the other, but both are based on the same idea, namely, to give a blind student a means of "setting down" arithmetic problems according to the traditional patterns adopted by seeing people who do their arithmetic with the help of a paper and pencil.

While these slates are quite effective for their purpose, they cannot reproduce faithfully all kinds of arithmetic problems, fractions being the hardest items to handle. As arithmetic students progress into algebra, the slates become increasingly inadequate. However, a number of mathematical codes exist which permit blind students to write down virtually any mathematical expression in braille. The Nemeth Code, now adopted for use in the United States, is a good example.

BRAILLE DEVICES. Since it is true that all arithmetic problems can be laid out in braille, including those for which the Taylor slate and cubarithm were designed, it seems logical to consider whether it

would not be better to rely wholly on braille, using either a Hoff Aid, a braille slate, or a braillewriter.

A few words about the relative merits of these three braille devices may be appropriate at this point. Each one has advantages and limitations. For the small child in the classroom, the braillewriter demands less muscular effort, but cost and weight are disadvantages. The Perkins Brailler is perhaps the quickest of these devices to use. When the specifications for its design were prepared, the needs of arithmetic pupils, as well as students of advanced types of mathematics, were carefully included. The braille slate has the very serious disadvantage of writing in reverse, and making it hard to find partial answers while continuing the arithmetic process. The Hoff Aid overcomes these difficulties. So far, it has not had widespread use, but for students with adequately developed fingers, it would seem, theoretically, to be quite satisfactory. Eventually, however, practically all blind people who make calculations, either in high school or after graduation, fall back upon the pocket braille slate as their chief, if not their only, arithmetic aid.

Informal surveys among Perkins graduates show that practically no one who was taught arithmetic on Taylor slates or cubarithms ever used them outside the classroom. Practically none of them owned such equipment after leaving school. Moreover, during my years as a teacher at Perkins of high school arithmetic, algebra, and geometry, hardly one of my pupils used either slate in the classroom, though both were available, and anyone who so desired was encouraged to use them. The only pupils who consistently found them helpful were those who had lost their sight after developing the seeing patterns very fully. The plain fact seemed to be that pupils soon learn to do much of their arithmetic mentally, and such partial results as they may need, they record with ease on braillewriter or slate.

MENTAL ARITHMETIC COMPARATIVELY EASY. Let me repeat that this is not a plea on behalf of mental gymnastics. There have, of course, been many blind students who developed their mental abilities to the point where they could multiply or divide large numbers unerringly. Probably few blind adults deal regularly with numbers in excess of one thousand. The American decimal currency may supply them with sums for manipulation which go up to $999.99, but by the simple task of handling dollars and cents separately, the problems are usually reduced to three-figure affairs. In class, of course, students do have to handle bigger-figured sequences (certainly up to five in logarithms and with trigometric ratios), but in class the majority of manipulations involving these numbers are confined to addition and subtraction or to multiplication and division by single-figure numbers.

I found that most of my pupils had learned to do a great deal more of their arithmetic work in their heads than is common among seeing children. This being the case, it would surely be wise to encourage this from an early age, rather than to teach techniques which they will soon abandon and which quite possibly might discourage the development of mental arithmetic, since the use of slates is usually based on a process of mastering rather obscure processes involving figures rather than a direct handling of quantity.

NUMBERS VERSUS FIGURES. Perhaps an example might be given of what is meant, if we compare the traditional technique of multiplication with the way most blind people seem eventually to learn to do for themselves. Each method requires a mastery of the same multiplication facts up to 10 x 10, and this, of course, is a purely "mental" achievement.

Example: a) 27 x 138

It is so difficult for the average person to discover just how he does his arithmetic that it might be well to spell out each step in the normal process in order. It would go something like this:

2 x 8 are 16. Write down 6 and carry 1.

2 x 3 are 6, add 1 are 7.

2 x 1 are 2.

Now multiply by 7.

7 x 8 are 56. Write down 6 on the next line, starting one space to the right . . . and so on.

All of these steps are good, but they are only obscurely related to the problem at hand.

b) A person who seeks to obtain the result instead of learning to go through a process learns to think of 27 and 138 as quantities and not as two sequences of digits. This involves certain taught processes which are the reverse of those used in method "a". When he thinks of 138 he needs to think of 100 and 30 and 8, and not of 8 with a 3 in front of it and a 1 in front of that, as he did in the traditional process.

No doubt there are a number of ways of solving this problem "mentally," but the one which seems to be most commonly used by blind boys and girls would be as follows:

20 x 100 equals 2000. (This is hard only to those who have not learned to think of numbers as quantities rather than digit sequences.)

20 x 30 equals 600, added to 2000, gives 2600.

20 x 8 equals 160, added to 2600, gives 2760.

7 x 100 equals 700, added to 2760, gives 3460.

7 x 30 equals 210, added to 3460, gives 3670.

7 x 8 equals 56, added to 3670, gives 3726.

This may look like a much lengthier process, but actually it is nothing of the sort, and it has great advantage of being entirely logical from beginning to end. The amount of "writing down" involved in method "b" depends on the skill of the calculator. A person who does not "carry" numbers easily in his head, might write down all five partial sums as well as the final answer. Indeed, unless he can demonstrate his ability to calculate accurately without such help, a pupil should be required to do this.

A significant thing to notice, however, is that method "b" requires no particular two dimensional layout of work. The first partial answer can be written down just as well in a straight line as in columns; this, perhaps, is not too important, though it has been claimed that the major advantage of the arithmetic slate is the ability to operate more simply in columns than is possible on a braillerwriter. While this is questionable, it is less important than the fact that much of the arithmetic done by blind people can be written out in lines rather than in columns.

FACTS ABOUT NUMBERS. Of course children do not begin arithmetic by learning multiplication; first they must count and add. Example I. was chosen to demonstrate the importance of 27 being learned as 20 and 7 and not as 2, 7. Assuming a mastery of addition facts up to 10 + 10, let us consider:

Example II. *Addition, Method A. — Traditional*

59 + 76

The processes would be as follows:

6 + 9 are 15, write down 5 and carry 1. (Some teachers are more exact and say "carry ten").

1 + 7 are 8 and 5 are 13, write down 13, there is your answer! *135.* It works of course, even on a braille slate.

Method B. — Mental

50 + 70 are 120 (Five tens and seven tens are twelve tens)

9 + 6 are 15, added to 120 are *135*. The pupil would write down, if he needed, 120, 15, 135, either in columns or all in a straight line.

How about half a dozen numbers to be added? Here the "mental" operator has plenty of choices, but, as far as I can determine, most people who figure things in their heads, (and, of course, this includes a lot of seeing people as well as blind ones) add the first two numbers and then add the third to their sum, the fourth to that sum, and so on. Is it slow? Compared with the expert bookkeeper with sight it is very slow, but compared to the braille reader who has to keep his fingers on a column, or sets them up on a Taylor slate, it does not seem to be slow at all; indeed it seems to be a little faster.

Once more these methods depend on a child learning that 50 means five tens, and 70 is seven tens. Teachers who try this approach from the time when counting is taught, get good results. Perhaps an abacus or other device for collecting objects in groups of ten is helpful.

Subtraction is perhaps taught most helpfully, from the point of view of "mental" work, if the so called "additive method" is used. This, of course, is the method which sales clerks use in making change. However, there are perhaps more ways of doing subtraction than any other type of computation, and these suggestions are certainly not meant to be exclusive. The usual basic subtraction facts need to be mastered, and some quick calculators have found it worthwhile to learn the differences between all two-figure numbers and one hundred. Mr. Benjamin F. Smith, the present Principal of Perkins, who was formerly a successful teacher of arithmetic in our Lower School, made mastery of these differences a part of his instruction. He called them "complements" of numbers for lack of a generally accepted name. The value of this is obvious is such problems as:

111 — 77. Answer, 23 plus 11. Twenty-three here being the complement of 77, and being something which a pupil would learn automatically. Further example:

345 — 163. Answer, 37, plus 100, plus 45.

This is just given as an example of what might be developed if a serious study was made of approaches to mental techniques. Probably most people who do arithmetic at all in their heads eventually learn to give the complement of a number without any thought whatsoever.

THE DECIMAL DILEMMA. Learning numbers in terms of quantity is basic to this approach to arithmetic. Thus 4334 has to be treated as four thousand, three hundred and thirty-four, not, to repeat, as 4334. But how about 0.4334? Must the student be made to read this as .4 plus .03 plus .003 plus .0004?

It might be well to repeat that this article is not intended to say what a student must do. It is merely an attempt to analyze the observed mental processes blind children use when given a free rein. And, in this sort of number, if a student has learned to think in terms of quantities rather than figures, he recognizes the magnitude he is dealing with, as either "something between .4 and .5" or perhaps "something between .43 and .44." Usually he is fairly mature in his arithmetic knowledge by the time he has to deal with four-figure decimals. No doubt he has learned the easy way with one-figure or two-figure quantities, generally in connection with dollars and cents. Few of my pupils found decimals a serious problem.

DIVISION, ESPECIALLY "LONG". A person who has learned the usual pattern

of doing long division may feel that while he could learn to do multiplication fairly easily in his head, division would be too hard for him. Most of my pupils did not find it so. By the time they reached my classes in the Upper School, they usually had the method worked out. Actually it was no different from the "pencil and paper" method, though their approach to it was quite different. Let us take Example IV, which is the reverse of Example I.

Method A. Divide 3726 by 27. *Traditional form*

This is the hardest kind of basic problem to set up on a braille slate, and it is, I think, the hardest one to explain rationally to a pupil, though it is easy to get a child to memorize the different steps.

Method B. 27 in 3700 goes a hundred times, leaving 1026 over.

27 goes into 1026 30 times, leaving 216 over.

27 into 216 goes 8 times.

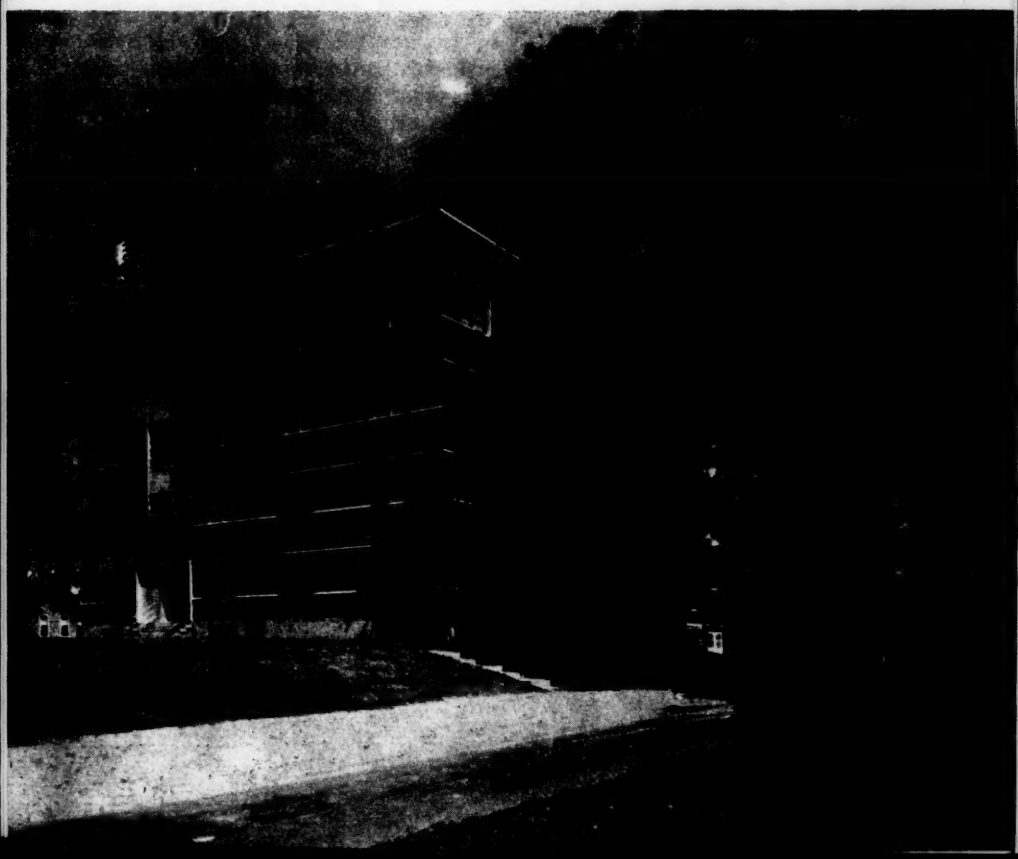
This is really exactly the same reasoning as Method A, but in Method A no one bothers to use reason, which is, of course, quite an advantage if you can use paper and pencil handily.

SUMMARY. In a very informal and incomplete way I have tried to point out that many blind people learn to do reasonably tough arithmetic problems without setting them up in traditional patterns . A knowledge of the traditional pattern is probably a hindrance rather than a help in developing this technique. Consequently, it would seem desirable to aid blind children by teaching arithmetic to them in a manner best suited to mental processes. My own experience indicates that this is a superior way to the traditional one which is being passed on from generation to generation in the common schools of Europe and America, simply because it works so well with paper and pencil that nobody wants to think about improving it. Once an instructor of arithmetic is convinced of the advantages to blind children of the methods outlined above, he will find them more meaningful and probably easier to teach, even though there is a lack of textbooks specially designed for this purpose. In such techniques, the Taylor slate and cubarithm do not seem to be needed. Perhaps this is also true of the abacus and soroban, except when a student may wish, for some special reason, to acquire the high speed in calculation which these two devices can give him. Probably there are very few blind people who need to acquire this rather specialized skill. Consequently, because of their bulk, they are not likely to find widespread favor with arithmetic students in the United States.

American Printing House For The Blind Opens New Administration Building

On the days of October 26-27, 1955, the Printing House celebrated the completion of its new administration building with a formal opening and tour of the plant. The Wednesday celebration, which was attended by invitation only, included a formal ceremony of cutting of ribbons and address by Dr. Herold C. Hunt, Under-secretary of the Department of Health, Education and Welfare, Washington. The second day was an open house for the general public of Louisville, a total of approximately 1300 people touring the plant during the hours from 1:30-9:00 p.m.

The new unit consists of four stories and a basement, providing an additional 16,000 square feet of floor space. In addition to the administrative offices and Board room, it houses the Talking Book studios, Talking Book reproducer assembly department, research areas, and miscellaneous storage. Functional in design, the building is outstanding for its attractively colored walls (different for each office), and new modern equipment.



Superintendent F. E. Davis, President William C. Dabney, and Vice-President Robert Lambert chat on front steps of new building.

President Dabney shows Dr. Herald C. Hunt the building plaque embossed in Braille, which is duplicated on opposite wall in raised Roman letters.

A Layman's Report On Retrolental Fibroplasia

By Daniel C. Birecree, Instructor

New York State School for the Blind

Until the school year of 1948-49, the New York State School for the Blind at Batavia, New York, had no students whose blindness was accredited to retrolental fibroplasia. At the close of this school year (1954-55) records show a total of 32 retrolental fibroplasia cases which represent 16.1 per cent of the school's enrollment.[1] It is because of this tremendous increase in retrolental fibroplasia cases that this report is compiled.

This report is written with the intent to familiarize the reader with retrolental fibroplasia, the research that has been and is going on, and the possible problems that this cause of blindness will cause in educational facilities for the blind. This report will deal with this problem as it affects the New York State School for the Blind.

A report on a subject so recent as this cause of blindness presents difficulty because of the limited sources in which one can find pertinent information. The information obtained for this report was compiled mostly from the *American Journal of Ophthalmology,* and the medical records of students attending the New York State School for the Blind. Information was also obtained from a tape recording of remarks made by John F. Gipner, M.D., during the annual Preschool Institute held at Batavia in 1955. John F. Gipner is Head Ophthalmologist at Strong Memorial Hospital in Rochester, New York.

The most logical approach to understanding this subject would be the translation of the term. "Retrolental fibroplasia" in its entirety is derived from Latin. *Retro* meaning behind or in back of and *lental* coming from *lentus* pertaining to the lens gives us the phrase "behind the lens." *Fibro* pertains to fiber and *plasia* to growth or formation. Hence, the translation of "retrolental fibroplasia" means "behind the lens a fibrous growth or formation."[2] Another name synonymous with retrolental fibroplasia is *retinopathy of prematurity.*[3] Some ophthalmologists prefer the latter term because they feel that retrolental fibroplasia is a misnomer. The reason for this will be explained as the report progresses.

Retrolental fibroplasia was first described by the late Dr. T. L. Terry and Dr. J. M. King in 1942 but because of its rarity it met with limited interest.[4] Doctors Terry and King were staff members of the Massachusetts Eye and Ear Infirmary in Boston. Since that time this cause of blindness has increased to such staggering proportions that many ophthalmologists list it as the chief cause of blindness in infants. Recent data released by the National Society for the Prevention of Blindness lists retrolental fibroplasia as the cause of 1/3 of the cases of blindness in children under 21.[5] The New York State Commission for the Blind lists 672 cases of blindness caused by retrolental fibroplasia from 1943 through 1953.[6] It can be understood from the preceding facts why the nation's ophthalmologists have turned their every effort to finding the cause of this disease.

Retinopathy of prematurity occurs almost exclusively in premature infants of low birth weight (5 pounds and under) and is considered a bilateral disease of the retina and vitreous.[7] After the acute stage which has its onset in the third through

sixth week of life a secondary cause of blindness usually follows.[8] The acute stage has the following symptoms: retinal vessel dilation and tortuosity, vitreous hazing, retinal edema and transudation, hemorrhage in the retina and vitreous, neovascularization, retinal detachment and retrolental membrane formation.[9] To make these terms more meaningful to the average person Dr. John F. Gipner during an address to a group of parents explained the acute stage of retrolental fibroplasia as follows:

> After twelve years of observation and study of retrolental fibroplasia we now have experimental verification of the toxic action of oxygen in high concentrations on the growing blood vessels of the retina of premature children. Ashton and others have demonstrated that in kittens' eyes (Kitten's eyes at birth are in the same stage of development as a premature infant's eyes.) after exposure to high concentrations of oxygen, the blood vessels clamp down and close off the circulation. If the kitten is then taken out of oxygen and placed in air the vessels do not dilate again and new blood vessels develop on the surface of the retina. The older the kitten the less the blood vessel closure and new vessel formation develops. The higher the concentration of the oxygen and the longer the exposure to oxygen the greater the retinal change. There is no effect of oxygen in the retina of an adult cat. Retinal detachment results from the scar tissue formation on the surface of the retina following bleeding of the newly formed blood vessels.[10]

It should be pointed out that Dr. Gipner's explanation left out conflicting ideas which have arisen among the various clinical teams that are doing research on this disease. The secondary conditions which follow the acute phase are the more familiar causes of blindness such as acute myopia, cataracts, glaucoma, etc.

It should be emphasized at this time that there is much disagreement on the developmental conditions of the acute stage. Some ophthalmologists contend that the end result of retrolental fibroplasia, which is retinal detachment, is caused by angiofibrous growth in the vitreous. Others believe that the angiofibrous growth is the result of hemorrhage in the retina and not necessarily the main cause of retinal detachment.[11] This difference of opinion has caused some ophthalmologists to deem the term "retrolental fibroplasia" as a misnomer.

Many clinical investigations have been and are at present underway. Some of these are investigating race, heredity, prenatal or postnatal conditions, geographical distributions, seasonal occurrences, sex distribution, vitamin A and E deficiency during gestation, and oxygen therapy for prematures. Latest reports from these research projects indicate to a degree that there is a relation between the incidence of retrolental fibroplasia and the duration, intensity, and use of oxygen therapy with premature infants.[12] It must be pointed out that, while there is indication that oxygen therapy is related to retrolental fibroplasia, there is disagreement that it is caused by insufficient oxygen supply to the retina, excess of oxygen supply to the retina or rapid reduction of oxygen supply to the retina.[13] An important factor which is still being studied by the various research teams is that of the length of the gestation period of the infant. Correlation between retrolenal fibroplasia and oxygen therapy is at present the most striking factor in most reports.

With all the technicalities merely mentioned the most pertinent fact to the various agencies for the blind is that there is at present a large number of blind children who must receive education now and in the near future. Already this large increase is being felt by the primary department of our school. Agencies which handle the preschool facilities for the blind are finding it necessary to expand rapidly. This causes

the usual problems of space, personnel, and budget. In the past three years at our school it has been necessary to add a primary instructor each year to handle adequately the large classes which are being caused mainly by the influx of retrolental fibroplasia cases. As this large number progresses the same problems will make themselves felt in the intermediate and upper grades. The State of New York has recently allocated $575,000 for a new primary unit at our school. Whether this will eventually meet the needs of the students at our school depends greatly on the results and success of the clinical research teams.

1. See below, p. 34.
2. *Cassell's Latin Dictionary.*
3. Charles A. Perera, M.D., *May's Manual of the Diseases of the Eye*, p. 304.
4. Leona Zacharias, Ph.D., "Retrolental Fibroplasia: A Survey," *American Journal of Ophthalmology*, 35:1426 (October, 1952).
5. "Trends," *The Field of Vision*, 9:1 (December 15, 1953).
6. See below, p. 34.
7. Zacharias, p. 1426.
8. Ibid., p. 1427.
9. Ibid., p. 1426.
10. Statement of John F. Gipner, Head Ophthalmologist at Strong Memorial Hospital in Rochester, New York, June, 1955, tape recording.
11. Zacharias, p. 1428.
12. Leona Zacharias, Ph.D., *et al.* "The Incidence and Severity of Retrolental Fibroplasia in Relation to Possible Causative Factors," *American Journal of Ophthalmology*, 38:320 (September 1954).
13. Leona Zacharias, Ph. D., *et al.* p. 332.

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Table I

RETROLENTAL FIBROPLASIA FREQUENCY BY YEARS

Year	Total Enrollment		Cases of Retinopathy Due to Prematurity	Percentage of Class With Retrolental Fibroplasia
1945-46	138	June '46	0	0
1946-47	144	June '47	0	0
1947-48	145	June '48	0	0
1948-49	144	June '49	1	.6%
1949-50	153	June '50	2	1.3%
1950-51	160	June '51	6	3.7%
1951-52	168	June '52	10	5.9%
1952-53	182	June '53	16	8.7%
1953-54	200	June '54	26	13.0%
1954-55	199	Mar '55	32	16.1%

Table II

PRESENT CLASS DISTRIBUTION OF RETROLENTAL FIBROPLASIA'S at NEW YORK STATE SCHOOL FOR THE BLIND (MARCH 1, 1955)

Grade	Total Registration of Grades	Cases of Retrolental Fibroplasia In Grades	Percentage of Retrolental Fibroplasia to Grade Enrollment
Kg.	24	14	58.3%
1	15	3	20.0%
2	18	7	38.8%
3	25	6	24.0%
4	13	2	15.3%
5	21	0	0.0%
6	13	0	0.0%
*7	10	0	0.0%
8	13	0	0.0%
*9	13	0	0.0%
10	9	0	0.0%
11	11	0	0.0%
12	3	0	0.0%
PG	2	0	0.0%
Sp.	9	0	0.0%
	199	32	16.1%

*Alleged cases of retrolental fibrobroplasia (doubtful identity).

Table III

SUMMARY:

PERCENTAGE OF RETROLENTAL FIBROPLASIA IN TOTAL SCHOOL REGISTRATION 16.1%

PERCENTAGE OF RETROLENTAL FIBROPLASIA IN KINDERGARTEN, 1-6 INCLUSIVE 24.8%

PERCENTAGE OF RETROLENTAL FIBROPLASIA IN KINDERGARTEN, 1-3 INCLUSIVE 36.5%

Table IV

Blindness from Retrolental Fibroplasia in New York State Reported to State Commission for the Blind According to Year of Report and Age at Time of Report

Year of Report	Age in Years at Time of Report														Total Each Year
	Under 1	1	2	3	4	5	6	7	8	9	10	11	12	13	
1943			1												1
1944	1	1	2	1											5
1945		4	4	1											9
1946	4	3	4	1	2	1	1								16
1947	2	13	4	4			1								24
1948	4	10	3	3	1	2	1								24
1949	17	21	14		3	1	2	2		1					61
1950	20	28	13	6	4	2	1								74
1951	32	60	18	5	2	2	2	2							123
1952	30	83	20	3	8	5	2	1	1	1					154
1953	59	92	27	4	1	2	3								181
Total by age at end of 1953	52	122	142	104	67	53	42	28	18	19	11	8	4	2	672

1. New York State Department of Health, Albany, New York, June 23, 1954.

To Sound Accord On Braille Music

By Harry J. Ditzler

Director of Music, New Mexico School for the Visually Handicapped

With the UNESCO-sponsored Paris Conference on Braille Music a year gone, it is time to take inventory; hence, this objective report. The fact that Delegates from the U. S. to the International Conference were well-briefed to reflect the preponderant views of their "constituents" was due essentially to the preparatory work of many people. In deference to these unsung collaborators a bit of history is here pertinent.

Early in '53 Chairman Langan of the Joint Uniform Braille Committee of the AAIB and AAWB appointed a Subcommittee on Music: Mrs. Nelle Edwards, Director of Braille Music Transcription at the American Printing House; Robert Robitaille, Head of Transcription Service, Quebec Division, Canadian National Institute for the Blind; John P. Egan, Perkins stereotypist; L.-J. Chard, Director of Muisc at the Michigan School; Mrs. N. Bright Samuel from Chicago, representing volunteer transcribers; and the writer; chaired by L. W. Rodenberg of the parent Committee. Egan subsequently resigned because of change of employment, and was replaced by R. O. Monaghan of the Batavia School. Our two-day meeting in the cordial atmosphere of the Kentucky School was enhanced by the presence, as consultants and observers, of the American Foundation's Alfred Allen; Jean Di Biasio, Secretary of the Quebec Braille Musical Society; Mrs. Hazel Judd and William Mootz, both of the host school's music faculty.

Meanwhile, a tentative international conference had become a reality, scheduled for the summer of '54. Thus, the Subcommittee's original assignment of research for purely domestic purpose was considerably expanded toward integrating the American program for braille music into the envisaged world picture. Mr. Rodenberg had been named World Braille Council Music Consultant at UNESCO; that he might concentrate impartially on the world-wide task now before him, he asked to be relieved of heading our local group.

Our deliberations and conclusions stemmed directly from a cross-section of opinion gleaned via the Preliminary World Survey conducted by Consultant Rodenberg in anticipation of the Conference agenda. His comprehensive questionnaire, addressed to teachers and other professional blind musicians, brought more than a hundred replies from the U. S. and Canada, whose substantial area of agreement served to prescribe our course. Yet, ever aware that children would be most affected, the Subcommittee determined even further investigation, setting up a special committee of schoolmen: Edward W. Jenkins of Perkins, Gerald McCarthy at Overbrook, Oklahoma's John Meldrum, Monaghan, and headed by Chard.

Their renewed inquiry, directed exclusively to music departments in U. S. schools for the blind, elicited twenty-four helpful returns (several others explained that they were already on record by virtue of the previous general survey). These additional findings were reassuring in that they confirmed earlier response by almost identical overwhelming preference. A second Louisville meeting of the same personnel plus Jenkins and Paul L. Bauguss of Perkins stressed the ironing out of discrepancies in crystallizing a positive policy.

Thereafter, research went forward on an

individual basis, facilitated by the American Foundation's providing, in braille or inkprint according to personal need, British 1922, Rodenberg 1925, and Paris 1929 manuals. To avoid overlapping, recommendations were channeled through the Chairman to the Consultant and his Central Pre-conference Committee: Theodore Taferner of New York, Director Charles J. Beetz of that city's Lighthouse Music School for the Blind, Robitaille and Di Biasio, that indefatigable five issuing periodic communiques.

A brochure on Bar-over-Bar, with samples, was prepared for European colleagues, many, if not indeed most, of whom had little occasion otherwise to know this relatively new disposition. Our formulated policy was presented to the Music Section of the AAIB Batavia Convention, and there further refined and endorsed—the laying of groundwork persisted literally to the eve of the July Conference.

Some will reasonably wonder if all this meticulous preparation, at home and abroad, was justified by the fruits of the Paris conclave. The answer is an emphatic *yes*! A brief resume was given in a recent number of the Braille Musician; the Conference proceedings are now available, gratis, to all interested persons who will so advise the writer, Box 32, Alamogordo, N. Mex.

In London, H. V. Spanner, Braille Music Secretary of the World Council for the Welfare of the Blind, devotes full time and energy to the cause, with indispensable clerical assistance furnished by the Council. Mr. Spanner is a musicologist of the first water, witness his analyses of Bach's Little Organbook and Art of Fugue, or, in our own special field, his major role in compiling the 1922 Key and that clever invention, Bar-by-Bar. He is carrying to completion several projects entrusted to him by the Conference, and is currently submitting preliminary drafts of phases of the new International Manual to Delegates for approval or constructive criticism.

Pursuant to a Conference Resolution initiated by our own Subcommittee, the American Foundation for Overseas Blind established as of last January first, and is implementing machinery for, the international cataloging and distribution of braille music. There remains, however, one venture whose outcome is presently unpredictable.

At Paris, a novel idea was proposed from two unrelated sources: i.e., obviating the use of intervals by writing all notes of a chord after its initial one in the lower part of the cell. For example: the chord g-b-d-f, read upward, now portrayed "G with the third, fifth and seventh intervals," in the proposed setup would be written thus: G, in its normal position with regular value indication, followed, without intervening space, by b-d-f, all in the lower level. Of course, such scoring precludes that often-useful means of showing sustained parallel motion by doubling, at the outset, the one or more intervals involved, and restating them only at the end of the passage. The 1929 rule governing pitch-signs in chords is followed, with two differences:

1. The unison-sign is abolished, the two notes forming the unison being written out with the second preceded by its appropriate octave-sign. Two notes of the same name with no pitch sign between constitute an octave.

2. When the moving-note sign is used, skips are necessarily treated as in a melody, employing octave indications where thus required.

It will readily be seen that this so-called Note-For-Note system entails changing five basic signs, covered in a brochure from the Royal National Institute for the Blind, as follows:

Turn: after a note, points 5-6, 3-4; over a note, 4-5-6, 3-4.

Grace-note: acciaccatura, points 3-4; small note (appogiatura), 6, 3-4.

Trill: points 2-5; mordent, 5, 2-5; lower mordent, 5, 2-5, 1-2-3; extended mordent, 5-6, 2-5; extended lower mordent, 5-6, 2-5, 1-2-3.

Repeat: (measure or part-measure), points 3-4-6.

Staccato: points 3-6; its current adaptations for accents, etc., apply here.

Since publication of the brochure, a suggestion has come from Dr. Alexander Reuss of Germany, long-time expert on braille music, to the effect that, instead of the above changes, present signs be retained, prefixed by points 3-6 to distinguish them from lower level notes.

Revision, of whatever magnitude, inevitably imposes a corresponding hardship on the inured practitioner. Advocates of the Note-for-Note scheme argue that it is designed to help primarily the beginner. The issue, then, appears to be veterans' inconvenience balanced against possible benefit to neophytes, which benefit must first be carefully weighed. Doubtless, very few would welcome an innovation that could render obsolete the vast storehouse of music already embossed. Therefore, we are entitled to assume that, if this proposed method prevails, all music so written will be prominently identified as such to avert subsequent confusion.

Thanks to the World Council for the Welfare of the Blind, Note-for-Note versions (with signs altered according to the brochure) of these piano items may now be ordered in any quantity without charge, from the Royal National Institute for the Blind, 224 Great Portland Street, London, W. 1:

Beethoven. Menuetto from Sonata opus 2 no. 1 (Bar-Over-Bar, right hand read downward)

Chaminade. Eclogue from Album des Enfants, second series (Continental Style)

Chopin: Etude in A Flat, opus posth. no. 2 (Bar-By-Bar, right hand read downward)

Grovley: Petites Litanies de Jesus (Bar-Over-Bar, right hand read downward)

Gurlitt: Morning Prayer, no. 1 of Album Leaves opus 101 (Bar-Over-Bar, right hand read downward, and Continental Style)

MacDowell: To the Sea, no. 1 of Sea Pieces (Bar-by-Bar, right hand read upward), respective catalog numbers 22147 to 22152.

When the Note-for-Note plan was submitted, five Conference delegations favored immediate adoption, four would have no part of it, while nine shared the U. S. view: "The idea is too ingenious to be summarily dismissed; on the other hand, we feel neither qualified nor empowered to return home with so drastic a move a fait accompli." It was decided that music teachers in schools and classes for the blind everywhere be urged to give it a fair trial; reactions will be tabulated, whereupon the device will flourish or perish accordingly.

All comments and expressions of opinion should be sent to the Braille Music Secretary, H. V. Spanner, Esq., care of Mrs. Baxter, 16 Lawrence Road, London, S. E. 25. In order that the American Subcommittee may keep abreast of local wishes, concerned teachers throughout the U. S. are requested to clear their conclusions through the writer, by next April first—Easter in '56

The Role of a Blind Teacher

Roy Haynes, Teacher

Kentucky School for the Blind

A teacher without sight in a school for the blind might be expected to defend his position. Yet, to recognize this vested interest at the outset is to preserve at least the possibility of objective treatment of the subject. In the absence of conclusive research, however, observations gained from years of experience must lend credence to the blind teacher's opinions.

Without exception, blindness places tremendous limitations upon all of its victims, and the blind person who rejects his very real physical limitations fools no one but himself. If he is a teacher, he fails to discharge one of the primary obligations of his profession—to prepare young blind people to meet their problems realistically. A mature, well-adjusted blind teacher is particularly qualified to teach people to live with a major physical handicap, but the teacher who is not realistic forfeits that advantage. The astute teacher knows what his pupils have lost. He also knows that they have not been endowed with a mysterious sixth sense because of that loss. But far more important, he knows, and is best equipped to demonstrate, that a great deal remains. It is by no means true, then, that the combination of blindness and exposure to formal schooling is foolproof preparation for teachers of the blind.

Undoubtedly there are positions that cannot be filled satisfactorily by totally blind teachers, though the wise course would seem to be to avoid an ironclad rule and, instead, to decide the matter in accordance with a given siutation. Anxiety to succeed may make the beginner too optimistic, but ordinarily he can be depended upon to evaluate his own limitations as soon as his first burst of enthusiasm subsides.

There is no question but that blind pupils benefit vicariously from sighted teachers. No blind child should spend his entire school day with totally blind instructors. So-called blindisms (rocking, shaking the head, etc.) are normal behavior for some blind children, and parents should not be particularly disturbed by them, since they usually disappear with maturation. Often, however, sighted teachers can more effectively divert the child from such activities and help him to overcome them.

As to the question of just how many blind teachers a faculty should contain—an oft-debated matter—there is not, and probably should not be, any magic formula. Efficient management usually calls for the selection of an applicant to suit the position, not the other way around; and that would seem to be a sensible approach in this case.

The great anxiety which parents feel for the future of their blind chaldren is certainly understandable. It is a very real concern. How can they earn their livelihood? How will society accept them? How can they become normal adults without one of the major faculties for perception? The blind teacher in the classroom should—indeed, he must, by his example—furnish at least part of the answers. With gentle candor, he can sometimes discuss with parents matters which they might be reluctant to approach with sighted teachers. If he feels that a child is being coddled too much, for instance, he can often say so without arousing resentment. He can sometimes talk to his pupils, too, in a manner that they would resent from their sighted teachers. He can tell them that the world does not owe them a living simply because they are blind—at least not a very good one. Or, he can attempt to show them that if they get into the habit of seeking help they do not need, they need not be surprised when,

as adults, they are shunted into the role of second-rate citizens without the opportunity to take their place in society as responsible men and women. And he can say these things without the necessity of watering them down with too much tact.

But this does not mean that the blind teacher's job is to play the pessimist, always stressing his pupils' handicap. On the contrary, his own accomplishments should help to motivate his pupils. If he is a very good braille reader, the student who is having trouble with reading cannot—as he is sometimes wont to do—offer the excuse that no one can master braille. If he gets around well, he is, in effect, saying to the recently blinded child that walking will not always be such a trial to him. This is genuine encouragement that is apt to be enduring.

But of course this is not to say that a blind teacher should throw away his textbooks and become a self-styled therapist or a missionary. Both are respectable undertakings in their own right. If he is engaged as a teacher, he must teach. The three R's are at least as important to the blind as they are to anyone else.

Houseparent Not Housekeeper

By Mrs. Merrill M. Barlow, Houseparent
Ohio State School for the Blind

Can houseparents maintain a professional attitude toward children and retain love, sympathy and understanding for them? This is a real challenge to all members of a school staff.

The first AAIB Workshop for Houseparents was included in the 1954 Convention at Batavia, New York. The forty persons from fifteen states participating agreed that the program was helpful, interesting and stimulating. This was the first step toward organized trained thinking in this very important field. The feeling of working for advancement of prestige and professional status increased the awareness of responsibility to the school and the children. Every opportunity must be taken to consciously advance houseparents' abilities to give better service. Many have had hyperactive days in large homes, with professional husbands, children who are educated and successful, civic experiences in P.T.A., church and clubs and other educational institutions. Others have been teachers, practical nurses or homemakers in their own or parents' homes. Regardless of former activities and since most houseparents are mature, they have had many experiences in other fields, and bring the judgment and the abilities to read, follow adult education work, and training-on-the-job by learning with understanding all those things available, and applying them with mature judgment to the children in their care.

The courses in summer sesions at universities, in P.T.A., parent education classes, in parental guidance departments of adult education in public schools, and in our own houseparent workshops are much alike. One university reading list which is very usable can be read in your own room going to the counselor only when and if desired. The school librarian is a good source for reading lists and recommended reading.

Some suggestions of special interest to all houseparents are BLINDNESS by Zahl; THE BLIND IN SCHOOL AND SOCIETY by Cutsforth; THE OPENING DOORS by Mrs. Henderson, the mother of a blind child; FORTY-FIVE IN THE FAMILY by Burmeister; and such pamphlets as THE HOUSEMOTHER'S GUIDE, THE HOUSEPARENT'S ROLE, etc. For others wishing to read in the general area of child development, pamphlets may be secured from the

White House Conference on Children and Youth. AN INTRODUCTION TO CHILD STUDY by Ruth Strang, THESE WELL ADJUSTED CHILDREN by Langdon and IN SEARCH OF SELF by Jersild are particularly good and easily read. There is a series of parent teacher pamphlets obtainable through Teachers College at Columbia University, New York, New York for twenty-five, thirty-five, and fifty cents. For those looking for good discipline suggestions many pamphlets are obtainable from the Committee on Mental Health, State Charities Aid Association, 105 E. 22nd Street, New York 10, New York, and the Association for Childhood Education, 1201 16th Street, N.W., Washington 6, D. C. Help for play suggestions for young children are available at the National Recreation Association, 315 Fourth Avenue, New York, New York.

Since education is an accumulation of the experiences of others, usually by reading and applying others' experiences to individual needs, materials in our special field are plentiful.

One of the most important factors is that the children entrusted to our care must know and understand that we like them even though we may dislike the things they do. This must be a genuine affection, as children are seldom fooled by insincerity. Houseparents must know that six year old Keith and thirteen year old Mike have to make a lot of noise so that everyone will know they are individuals; that sixteen year old Ken is lazy because he is just plain tired — his long bones and muscles have outgrown his torso, and his stomach and heart have to work overtime to keep the rest of him going. If it is understood that the sightless child substitutes the motion of his own body for the movements sighted persons see, it will be easier to help him correct his "blindisms" with more true patience. Thus, proper knowledge enables one to have interest, love, and understanding and eliminates some irritations in the training of children.

The early adolescent group presents an interesting challenge. The following episode has many angles. Usually results are not so quickly obtained, but the change in this boy was almost as sudden as turning on a light switch. Joe was a new student and felt very important. Upon entering the cottage one day he remarked "I am a big wheel here already — really got these guys' number." He refused to cooperate in the cottage in any way and would not do the things expected of the other boys. When spoken to he always answered "Yes, I know" usually followed by some remark indicating his intimate association with an administrator. Houseparents too often allow children to use this method of intimidation because they lack the time or the threshold of conversation with their administrators. The houseparent in this case talked with the administrator and learned that he, too, was concerned and felt the necessity of guiding this boy toward maturity in physical and emotional living as well as academically. The houseparent then talked with the boy, not mentioning that she had talked with the administrator. She approached Joe with the question "If you were the houseparent and the houseparent you, what kind of a grade would you get?" It was explained to him that bed making, hanging up clothing, cleaning wash bowls, dust mopping, and keeping his own room in order was done to help him to be able to care for himself when he was no longer at the school, not primarily to get the work done here. In fact he was told that it was far easier for the houseparent to do many of these chores than to teach him to do them. He finally volunteered that he had not earned even a C, but he hoped he would at least receive this grade. We agreed with him and reminded him that it would be a good time to start at the beginning of the next grading period the following morning. The C may have kept him off the first honor roll, but his cooperation and accomplishment about the cottage improved one

hundred per cent. Joe is capable of doing everything that is expected of him at this point and he is now well-adjusted. The time given to explaining the whys and wherefores of what we do is so worthwhile. The knowledge of techniques helps convince the students that they are really liked and that everyone is working for their best interests. Sometimes very fine intentions go astray without thorough understanding of how to "put them over."

A definite routine gives children a feeling of security. The child is called at exactly the same time each morning so that he knows exactly what he can accomplish before breakfast. If he is to be called at a different time, he is told the night before and an explanation given regarding the change. Because all children are different, each child must decide if he makes his bed before or after breakfast, according to what he has to do for himself. If a student wishes to be called earlier than the rest for some reason or if he is slower than others, he should be called in compliance with his needs. Of course, this is with the adolescent group, and it is necessary for the houseparent to make decisions for the small children. Each child must bathe every day, but after he is fourteen he may decide when, so long as it is not when he has responsibilities elsewhere.

When children are in a residential school, there are rules that have to be followed to facilitate the living together of a larger group than the average family. However, as many decisions as possible should be permitted to the children themselves. It is important that the same rules apply to all children in the same cottage. If the houseparent's room or personal TV is available to one child, it must be to all. Bedtime should be the same for all the children in the same group. Most students admire fairness; even those who get the special privileges do not admire the houseparent who gives them. Frequently the child who is made a pet is the loser because he fails to learn the pleasure of give and take; he is set aside by the other students. A child who knows that he may do certain things, and that when de does other things he must be isolated or denied privileges, learns to weigh the price of privilege and responsibility. If his training is consistent and he knows he is liked, he is being helped to grow into a happy, responsible, well-adjusted adult, and he feels better within himself and becomes a pleasant person to have in a group. A consistent routine is the best procedure, and definite time off, hobbies and interests that can be discussed with the children insures a more qualified houseparent. No one in such a position can be a clock watcher. A mother in a home is a better person if she has outside interests and can be away from details, and houseparents will be better counselors, guides and friends if definite free time is allotted them. Again just as a mother needs to change as the child grows from a few years of physical care and definite direction, to a few years of guidance and help, to years of good friend and counselor, so houseparents need to follow the normal interests of their particular age group.

Houseparents have an important and interesting place in this picture of educating handicapped children. They must have sympathy, understanding and real love for the children with emotions that are supported by the security of professional knowledge. Let us add to all of these by attending the AAIB Houseparents' Workshops at the Ohio State School for the Blind, June 24-28, 1956. The Houseparents have been divided into two groups, those interested primarily in younger children, and those working with the adolescent and older groups. We feel it will be even more helpful, interesting and stimulating than the first session.

A New Series Of Standford Achievement Tests Apdapted For Use With Blind And Partially Seeing Pupils

By Samuel P. Hayes, Ph. D., Psychologist

Perkins Institution and Massachusetts School for the Blind

Early in 1956 the braille pamphlets and special directions (for their use with visually handicapped pupils) for Form J of the 1952 revision of the well-known STANFORD ACHIEVEMENT TESTS, SERIES J-N will be available on quota acounts from the American Printing House for the Blind. This new form will be a very welcome addition to the series of achievement tests now available, since it has become increasingly difficult to obtain ink-print material needed for the braille grade 2 tests now listed in the catalog of the American Printing House (Metropolitan Achievement Tests, Forms T and U, and Stanford Achievement Tests, Forms D-H.)

As in previous adaptations, the oral method of administration is largely used. In the oral method, the examiner reads the directions, the test items, and the alternative answers aloud, the pupil reading in braille only the alternative answers and marking his choice of answer by means of a stub-pencil. This method minimizes the effect of differences in reading ability on the scores of subject-matter achievement itself.

As in previous adaptations, tests made too long by necessity of the 2½ times extension of sighted reading time limits are divided into equivalent parts for administration to blind children in two sittings. Although use of only one part may be adequate where time is limited, it is highly desirable to give both parts.

An important innovation in the J-N series is the provision for the first time of tests to be used below the fourth grade. These comprise the Primary and Elementary Batteries. Preliminary trials with some of these tests at the Test Conference at the Kentucky School, October, 1954, and in several schools since then, indicate that average third graders and bright second graders may be expected to make creditable showings. However, more adequate data are needed to determine with assurance at what age or grade levels pupils may reasonably be expected to succeed with group achievement tests involving the use of braille and other tactual material. When adequate reports have been received and studied by the author, norms may be established and further recommendations made. The prospect of additional objective evidence of achievement below the fourth grade is alluring and may be as valuable for educational guidance as it has proved to be from the fourth grade upward.

For the first time, an ink-print pamphlet of directions for administering and scoring will be available instead of the mimeographed directions which have accompanied earlier adaptations. This will appear in format as nearly similar as possible to that published for seeing administrations. This should simplify the testing procedure. For each of the battery of tests from the primary to the advanced, full directions are first given for administrations involving braille reading, then directions for administration by the dot sheet method (for non-braille readers). Thus, no backward or forward flipping of pages of instructions are needed after the method of administration has been determined.

Another innovation that it is hoped will be included is that of prepared scoring keys. Heretofore, these have been borrowed from the author at Perkins School.

It is tentatively suggested that seeing norms may be used and direct comparisons may be made between the blind and seeing in the same grades for all timed tests given in the same way to the blind and seeing. Years of research at Perkins with supplemental data from other schools attest the appropriateness of this procedure for all tests except Arithmetic Reasoning. When tests are administered by the oral method, recommendations have been made for a reduction of grade scores. This is necessitated by the fact that when the oral method is used, the whole of the material is presented, all the pupils having a chance at a much wider range of material than they would were a time limit imposed. Tentatively appropriate grade-score-adjustments are suggested in the directions. As soon as sufficient reports have been received from schools, further recommendations in this regard will be made. Meanwhile, the major values of objective testing are achieved in that scores as obtained can be used to study the relative attainments of the individuals of a grade and comparisons of grade attainment may be noted.

As in our former adaptations of achievement tests for the visually handicapped, the test in Arithmetic Computation has been omitted, for the reasons presented in the author's article "Arithmetc, Teaching and Testing in Schools for the Blind," Outlook for the Blind, 38, No. 4, April, 1944, pp. 99-108.

Since this adaptation is the first to follow the adoption of the Nemeth code of mathematics, the Arithmetic Reasoning Test is supplied with materials in either the Taylor or Nemeth codes. It will be necessary, therefore, when ordering tests, to specify in which mathematics code the Arithmetic Reasoning Test is desired.

The long-time desire to be able to order specific, individual tests without having to purchase the whole battery will be met with the publication of this adaptation. Test users may specify those tests from the battery they wish, and will be charged only for those tests.

Prices on the new adaptation will be as follows:

FORM J:

PRIMARY BATTERY (3 pamph) .....
75c per set, or 25c per test

ELEMENTARY BATTERY (10 pamph)
$2.50 per set, or 25c per test

INTERMEDIATE BATTERY (19 pamph)
$4.75 per set, or 25c per test

ADVANCED BATTERY (20 pamph) ....
$5.00 per set, or 25c per test

Ink-print Directions (write to APH for prices and delivery)

Dot sheets (for either 2, 3, 4 or 5 choices, 25 sheets to each package) per package 50c

Braille vs. Spelling

by Marcelina I. Williams

Graduate Student, Hunter College, New York City

In the course of learning braille, the child becomes well acquainted with the different word contractions. Especially do we find this true in grade two braille. These contractions are very useful, because of the amount of space they save in both reading and writing. But these contractions for words in braille present a great obstacle to good spelling. Before any further discussion, the aims of spelling instructions as seen by Jane Martin, in Dr. Frampton's Book, "Education Of The Blind," should be stated: "The study of spelling seeks to provide essentially three abilities: (1) ability to spell four or five thousand words commonly used in writing; (2) ability to learn to spell words in school and to recognize them through life as one meets them in

reading; (3) ability to correlate spelling knowledge with all other reading and writing experiences."[1]

"In teaching spelling to visually handicapped pupils, a few differences become apparent in apparatus employed, in technique of making corrections in writing, and in emphasis on certain devices that are more helpful to the blind pupil than to the sighted. These differences include the following: (1) all written work is in braille; (2) all study from texts and readers is from brailled books; (3) there is no blackboard work; (4) alterations may be made in written work by "six-pointing," rewriting, or other methods individually devised for correcting braille errors."[2]

Among the visually handicapped there are four types of spellers, each with his particular aim and each requiring his peculiar mode of learning devices:

"1. Tactual spellers. Those who associate the touch of the braille letters with the motions necessary to write them. The aim of the tactual method is to build associations between the touch of the braille letters and syllables and the movements used in writing them. Drills and devices are necessary to establish associations between the sounds of the word, the touch of the braille symbol, and the neuromuscular sensations aroused in writing the word.

"2. Motor-minded spellers. Those who learn to spell best by practicing the motions necessary to write the word. The aim in this instance is to make correct spelling a part of the neuromuscular system. The word should come to be thought of as a whole, when writing either on the writer or the slate, exactly as a musical phrase is thought of and played on a piano; separate letters, as separate notes, are set in proper relationship automatically through practice.

"3. Auditory spellers. Those who link the sound of the word with the motions necessary to write. The aim of the auditory method is to develop association between the tactual perception (of braille symbols) and the sounds, letters, and syllables of the word. The pupils should touch the word as he pronounces it or hears it pronounced. Adequate experience with the word should be provided by way of frequent writing from dictation."[3]

If these are the types, then what are the methods for teaching spelling to the blind? There are two philosophies as to methods of teaching spelling to the blind. These are: (1) the word method, "that is teaching the child to recognize whole words, phrases, and short sentences before they are taught the letters and component parts of the letters. This means (if this method is used) postponement of the teaching of writing until the pupils have fixed the habits of thinking in large units, so that the study of the dots will not interfere with the reading process. This method, however, cannot be carried as far in classes for the blind as in schools for the seeing, because the blind child's attention will not stand the strain placed upon it by too long phrases or even by too long words, the reason for this being that a word in braille is much longer than the same word in inkprint. Although the word method has brought good results wherever it has been used it has limitations when used with blind children."[4] (2) the phonic method or letter by letter, "this method includes pointing out words that begin alike and end alike; having children pick out such words; making simple rhymes; recognizing combinations of letters, such as *sh, ch, ca, di, bu, etc.*; recognizing combinations of sounds to make a word; learning and using a few phonetic rules such as the effect of final *e*; and figuring out new words."[5] Of these methods the latter seems the better of the

two. However, a combination of the two methods would be better, for in the word method the child hears the pronounciation, in the phonetic methods the child hears the rhyme and the combinations of the like letters and the ending of such letters. Together the two seemingly would produce better results than the two as separate methods.

Although these things do exist, spelling is still difficult for the blind child. Reasons are: (1) the lack of vision itself: they are unable to perceive the whole word at a glance as do the sighted; rather they have the tedious job of reading rather long phrases, because of the difference between braille and ink-print. It is a piecemeal job that is done, and learning whole things rather than parts is done much more comprehensively. (2) general lack of interest in languages: this results from the fact that the child does not want to change from his usages of certain words, because of the pressure from home. The conditions of some children's lives hinders their progress, because some member of the family will make this remark or similar ones, "think you are better than us." (3) the psychological aspects: the children do not want to get good grades, say A or B, as it is felt by some pupils that in order to get good grades you must be the teacher's pet, and others feel it is sissified to get good grades. (4) the national tendency to make fun of spelling and of English in general: the nation's idea of a good joke is the misusage of the language. (5) the low I.Q. level of most of the children, and (6) the talking book, with all of its good aspects, hinders spelling by not having an introductory record that would pronounce and spell certain words that would be used throughout the recording. The disadvantage of the talking book is felt more when the class is assigned a book report that is to be obtained from a talking book. These above reasons were based on a talk that I had with two of the teachers of English at the New York Institute for the Education of the Blind.

The reasons why braille and spelling are not good combinations have been enumerated. A few suggestions as to means of improvement should be enumerated also. Psychologists generally agree that there are three steps in learning to spell a word: (1) A clear impression of the word and of the sequence of its letters is gained. (2) Associations are formed which will aid in recalling this sequence of letters in relation to the word. (3) Actual writing of the word, accompanied by the conscious recall of its image and its associations is practiced. These three processes may be analyzed as follows: (1) gaining clear impressions—a clear impression or image of any word must be gained by the learner for himself, although the teacher may assist him in securing it. The word may be presented by the teacher or studied by the pupil in its oral or its written form. It may also be spoken by the learner. Pronouncing the word carefully, and spelling it orally gives assistance; (2) forming helpful associations—associations which aid in recalling the image of the word are directly helpful to the learner only to the extent that he establishes them for himself. These associations may be (a) auditory—to form auditory associations, the sound of the word and of its parts must be carefully noted as the word is pronounced or spelled orally. An effort may be made to identify or to contrast sounds in this word with sounds of a word or words previously learned; (b) speech-motor—to form them, the movements of the vocal organs involved in pronouncing the word or in spelling it orally are consciously or unconsciously indentified with movements involved in the pronuncia-

tion or in the oral spelling of similar words previously learned, as in the case of words of the same phonic family, for example, bright and light; (c) hand-motor—to form these associations, the movement involved in writing the word are consciously or unconsciously identified with the movements involved in writing identical parts of words previously learned. Besides these, oral spelling contests developed between different schools, thus developing a desired feeling of competition; an individual list of all the common words which a pupil has misspelled, or which usually have been difficult for him; and, most of all, the teacher must develop a motivating and challenging lesson.

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DATES TO REMEMBER

1955

December 1—White House Conference on Education, Washington, D. C.

1956

February 23-25—EAAB Wrestling Tournament, Hartford, Conn.

February 24-25—MAAB Wrestling Tournament, Arkansas School for the Blind, Little Rock, Arkansas.

April 10-14—ICEC National Convention, Minneapolis, Minn.

June 24-28—AAIB 43rd Biennial Convention, Ohio School for the Blind, Worthington (Columbus), Ohio.

July 8-13—AAWB 30th Convention, Los Angeles, California.

August 1-10—Joint Uniform Braille Committee Meeting with British Committee, London, England.

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